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ABSTRACT

The contention of this study is that persons perceive and interpret the behavior sequences of others differently as a function of the relative degree of their own experience and feeling of personal causation. Subjects were 96 paid female graduate students, representing the two extreme groups on the Rotter's Internal External Scale (I-E). All I's and E's were randomly assigned to the basic ascending (a) and descending (d) performance pattern conditions in one of four groups. Each subject had the opportunity to observe others' performance and to perform. Results of the study include: (1) externally controlled subjects (E) would rate themselves higher in the descending than in the ascending performance conditions; (2) E's, with the exception of the IQ ratings for others, showed the primacy effect for both self and other ratings, they never showed a recency effect; and (3) while not showing a recency effect for all criteria on self and other ratings, any recency effect found in the study was obtained for I's. (Author/SJ)

The Development of Intellectual Expectations for Others as the Result of Perceiving Different Patterns of Performance and the Locus of Control of the Perceiver[1]

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The idea that persons' impressions of others with whom they interact are important determinants of subsequent interpersonal, perceptual and behavioral, relationships is not a new one in social psychological research (Bruner and Tagiuri, 1954; Heider, 1944, 1958; Manis and Meltzer, 1967; Mead, 1934; Tagiuri, 1969; Tagiuri and Petrullo, 1958). However, empirical evidence documenting the implications of this idea, as for example in terms of "expectancy effects", is relatively new (Beez, 1968; Carter, 1969; Good, 1968; Rosenthal, 1964a, 1964b, 1966; Rosenthal and Jacobson, 1966, 1968) and clearly not yet systematically delineated (Barber, 1969; Barber and Silver, 1968a, 1968b; Claiborn, 1969; Levy, 1969; Snow, 1969; Thorndike, 1968). Furthermore, the studies investigating teacher expectancy (Beez, 1968; Carter, 1969; Rosenthal and Jacobson, 1966, 1968) have, with one exception (Good, 1968), dealt with expectancy in terms of some <u>given</u> information about the pupils. Information has been given to teachers either in terms of different psychological reports (Beez, 1968; Carter, 1969) or by telling them which pupils were

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expected to be "late intellectual bloomers" and thus most likely to improve academically (Rosenthal and Jacobson, 1966, 1968). The purpose of this paper is an attempt to investigate some of the conditions and processes underlying the formation and development of such impressions or expectations of others for school related performances without given prior information in the light of attribution theory in person perception.

It seems reasonable to think that teachers' expectations for their pupils are dependent in part on inferences derived from their perception of pupils' actual academic performance, or more specifically, from pupils' temporal rate or <u>patterns</u> of performance. In other words, while some pupils may regress in their rate of school performance, others are likely to make progressive improvement. Common sense and folk lore in educational circles have it that teachers are sensitive to and cognizant of pupils' manifest improvement in school, implying that teachers' expectations are higher for pupils who improve in school than for pupils who do not improve or for those who in fact regress in their school performance. However, in the light of a recent series of person perception experiments by Jones, Rock, Shaver, Goethals, and Ward (1968) one is led to critically evaluate if not question such an assumption.

The series of experiments by Jones <u>et al</u>. (1968) are basically attribution studies based on Heider's (1944, 1958) theoretical writings and the subsequent extensions of his ideas in attribution theory (Jones and Davis, 1965; Kelley, 1967). Unlike much of the earlier work in person perception, attribution theorists have suggested that the conditions and processes involved in the perception of other persons are not the same as the processes operative in the perception of one's world of objects and things.

One's impressions of others are not immediately and objectively given but must be conceptually inferred. Moreover, unlike inferences made from relatively stable characteristics like body build, sex, race, etc., inferences from persons' sequences of behaviors involve the process of attributing causal relationships and dispositional characteristics to the source of the behaviors or behavior sequences (Heider, 1958). The perceiver is confronted with the question of why another person acted and why the act or pattern of acts took on a particular form. In Heider's (1958) terms, the basis for the attribution process lies in the "unit formation" or conceptual unity between an observed behavior and an attribute or disposition, and as such, attributions of phenomenal causality are centrally related to the concepts of "can" (referring to a person's power or ability to do something), and "try" or "want" (referring to a person's motivational stance or purpose).

Although a number of studies have investigated various aspects and consequences of making causal attributions (Heider and Simmel, 1944; Johnson, Feigenbaum, and Weiby, 1964; Jones and de Charms, 1957; Thiebaut and Riecken, 1955; for a recent review of others see Maselli and Altrocchi, 1969) the findings by Jones et al. (1968) are of special interest here.

When subjects in the Jones et al. (1968) studies were given the opportunity to observe another person (an accomplice) perform on a series of 30 intellectual problems, and were then asked to predict that person's performance on a second similar series of 30 problems they showed an unexpected "primacy effect". They attributed higher ability (higher IQ and higher predicted performance) to the accomplice manifesting an apparent declining pattern of performance in the experimentally controlled descending performance condition, than to the accomplice who showed an apparent improvement over trials in the experimentally controlled ascending performance condition.

However, when subjects were asked to evaluate and predict their own performance (hypothetical or actual performance on the problems) on the basis of either observing the accomplice or working the problems themselves, they did not always evidence the primacy effect but in some cases actually showed a "recency effect", in that they rated themselves higher in the ascending performance condition than in the descending performance condition.

Inasmuch as the objective behavioral cues were essentially the same for the self and other rating conditions in the Jones et al. (1968) experiments the obtained results tend not only to question the adequacy of a logical inference model but actually seem to support the personal knowledge model in attribution theory as explicated most recently by de Charms (1968). Based on studies of Piaget (1930), and the philosophical writings of Polanyi (1958, 1966), de Charms has contended that the starting point in attributing causal relations and intentions to others, as the result of observing their behaviors, is the perceiver's own personal knowledge of the intention-behavior link. The contention is that persons perceive and interpret the behavior sequences of others differently as a function of the relative degree of their own experience and feeling of personal causation.

Using the conception of locus of control (Rotter, 1966; cf. Lefcourt, 1966), as developed from Rotter's (1954) social learning theory, as a dimension of personal causation one would expect internally controlled persons (I's) to have experienced a greater degree of personal causation than externally controlled persons (E's) and thus perceive their own and other's performance outcomes differently. Moreover, assuming the personal knowledge model in attribution theory one would expect I's, more than E's, to perceive others like they perceive themselves.

More specifically, given an experimental situation similar to that of the Jones et al. (1968) studies, one would expect the primacy effect, obtained by Jones et al., to occur primarily for E's; I's would tend to perceptually reconstruct and interpret their own and others' sequence of behaviors as patterns of causal relations and thus manifest an apparent recency effect.

Method

Subjects and Design

Ss were 96 paid female graduate students in Education, selected from a larger group of 154 students, so as to represent the two extreme groups on the total distribution of scores on Rotter's (1966) I-E Scale. Ss scoring in the possible range of 0 to 11 ($\bar{X} = 7.50$; $SD = 2.15$) on the scale were designated as externally controlled (E's) and Ss scoring in the possible range of 15 to 23 ($\bar{X} = 17.97$; $SD = 2.18$) were designated as internally controlled (I's).

All I's and E's were randomly assigned to the basic ascending (A) and descending (D) performance pattern conditions in one of four groups so that the two partners were either in the same performance pattern conditions (A-A or D-D) or in different performance pattern conditions (A-D or D-A).

Inasmuch as Ss participated in pairs, each S had the opportunity to both observe another S perform on one of two series of 30 multiple choice problems in analogies and progressions (a modified version of the problems used by Jones et al., 1968) and to perform on a second series of similar problems while being observed by the partner. One-half of the Ss observed their partner perform first, then performed themselves (O-S order); and one-half of the Ss performed first themselves, and then observed their partner perform (S-O order).

Procedure

Ss were admitted to the laboratory in pairs, given a set of instructions and informed by the E that the experiment they were to participate in was a "study of performance and problem solving in a social situation". The S randomly chosen by the E to be the perceiver was informed by her instructions that the purpose of the experiment was to determine the "social facilitation effects of her presence on her partner's performance on a series of 30 multiple choice problems". Her task was to "observe her partner perform and keep a record of her partner's performance by marking an X in the appropriate boxes on the instruction sheet for each correct response".

The other S, assigned to be the performer, was informed by her instructions that the purpose of the experiment was to determine "the possible facilitation effects of her partner's presence on her performance on a series of 30 multiple choice problems". She was to read the problems and give her answers orally, whereupon the E would indicate to her whether she was "right" or "wrong". Also she was to keep a record of her own correct responses by marking an X in the appropriate boxes on the instruction sheet.

Since the problems were constructed in such a way that about two thirds of them did not have only one correct answer, the E was able to introduce the two predesigned variations in the performance feedback patterns. All Ss in each of the performance feedback conditions were permitted to "solve" 15 of the 30 problems correctly, but in different sequences (Figure 1).

INSERT FIGURE 1 ABOUT HERE

After completion of the problems Ss were given the questionnaire which contained measures of performance prediction (PP), performance recall (PR), and IQ evaluation (IQE). PP scores were obtained by asking Ss to predict how many problems they thought that they (or their partners) would be able to answer correctly if given the opportunity to continue working on a subsequent similar series of 30 problems of equal difficulty. PR scores represent the number of problems Ss thought that they (or their partners) had been able to answer correctly during the prior performance. Similarly IQE scores were Ss' estimations of their (or their partners') intellectual ability as manifested by their performance on the problems. Several other questions concerning Ss' recognition of the performance patterns, and their relative attributions of motivation, problem difficulty and change of problem difficulty were included in the questionnaire. All responses were given on a 9 point rating scale.

After completing the questionnaire Ss were given a new set of instructions (which were essentially the same as those given in the first part of the experiment except that each S was instructed to perform the tasks previously assigned to her partner), and a second series of 30 problems, after which they completed the appropriate form of the questionnaire.

Results

Perceptions of Self

It was predicted that externally controlled Ss (E's) would rate themselves higher in the descending (D) than in the ascending (A) performance conditions, and thereby manifest an apparent primacy effect. Internally controlled Ss (I's) on the other hand, were expected to show an apparent recency effect by rating themselves higher in the A than in the D performance conditions. These predictions were generally supported.

As indicated in Table 1, the interactions between I-E and Ss' own performance patterns, $A\text{-}D_{(s)}$, were significant for all major criteria: (a) performance prediction (PP), $F(1, 80) = 21.8$, $p < .01$; (b) performance recall (PR), $F(1, 80) = 10.7$, $p < .01$; and (c) IQ evaluation (IQE), $F(1, 80) = 24.1$, $p < .01$. There were no main effects for Ss' order of performance on the problems (Ṡ)-(O), or for the performance conditions for Ss' partners, $(A\text{-}D_{(o)}$. Also, the interaction between Ss' own performance conditions, $A\text{-}D_{(s)}$ and I-E was not significantly influenced by either order of performance (134) or by the performance conditions for Ss' partners (124).

INSERT TABLE 1 ABOUT HERE

More specifically, the primacy effect for E's was apparent in the pair wise comparisons of the means (using Duncan's New Multiple Range Test), indicating that E's rated themselves higher in the D performance condition than in the A performance condition (a) when predicting their own subsequent performance (20.17> 15.92, $p < .05$); (b) when recalling their own past performance (19.25> 14.25, $p < .05$); and (c) when evaluating their own IQ (6.54> 4.87, $p < .05$).

I's, on the other hand, yielded the expected recency effect by rating themselves significantly higher in the A performance condition than in the D performance condition (a) when predicting their own subsequent performance ($17.75 > 14.75$, $p < .05$); and (b) when evaluating their own IQ ($5.79 > 5.04$, $p < .05$. I's did, however, not show a recency effect when asked to recall their own past performance but like E's recalled significantly higher scores in the D performance condition than in the A performance condition, $F(1, 80) = 30.2$, $p < .01$. This apparent primacy effect for all Ss was influenced by Ss' order of performance (SO-OS), $F(1, 80) = 4.7$, $p < .05$, but was never-the-less maintained when PR scores for self were looked at separately for Ss in the SO order of performance, $F(1, 44) = 24.7$, $p < .01$, and in the OS order of performance, $F(1, 44) = 7.1$, $p < .05$.

The differential self rating responses between I's and E's were further evidenced by I's rating themselves lower than E's in the D performance condition (a) when predicting their own performance ($14.75 < 20.17$, $p < .05$; (b) when recalling their own past performance ($15.41 < 19.25$, $p < .05$); and (c) when evaluating their own IQ ($5.04 < 6.54$, $p < .05$). Similarly, I's rated themselves higher than E's in the A performance condition when evaluating their own IQ ($5.79 < 4.87$, $p < .05$). It is not readily apparent, however, why over all conditions, E's, in comparison to I's, recalled significantly higher scores for their own performance, $F(1, 80) = 7.5$, $p < .01$; and made higher predictions for their own subsequent performance, $F(1, 80) = 5.3$, $p < .05$.

There were no differences between I's and E's in their ability to recognize the appropriate predesigned performance patterns. Most of the Ss apparently recognized the patterns. Also, I's and E's did not differ in attributing their performance to luck or chance or to a change in item difficulty.

However, I's, in comparison to E's, attributed a greater amount of motivation in general (Mot_{tot}) to their own performance, $F(1, 80) = 8.0$, $p < .01$; and more specifically attributed a greater amount of "effort" to the problems answered correctly ($Effort_{10}$), $F(1, 80)$ 6.5, $p < .05$; and reported a greater "interest" in the experimental task, $F(1\ 80) = 6.3$, $p < .05$.

Perceptions of Others

Not unlike Ss' perceptions of themselves their perceptions and evaluations of the performance of others, A-D(o), were influenced significantly by their own feelings of locus of control (I-E) when (a) predicting others' subsequent performance (PP), $F(1, 80) = 22.9$, $p < .01$; (b) recalling the performance of others (PR), $F(1, 80) = 5.5$, $p < .05$; and (c) when evaluating others' IQ on the basis of their prior performance on the problems (IQE), $F(1, 80) = 5.1$, $p < .05$ (Table 2). There were no main effects for the order of performance on the problems (SO-OS), or for the perceivers' own performance conditions, A-D(s). Similarly, the interactions between perceivers' I-E and the performance conditions for the stimulus Ss, A-D(o), were not influenced by either order (134), or A-D(s), the perceivers' performance conditions (124).

INSERT TABLE 2 ABOUT HERE

As predicted, pair wise comparisons of the means indicated that E's showed the apparent primacy effect also when perceiving and evaluating the performance patterns of others. They rated others significantly higher (using Duncan's New Multiple Range Test) when in the D performance condition than when in the A performance condition (a) when predicting others'

subsequent performance (20.54 > 16.83, $p < .05$); and (b) when recalling others' prior performance (18.83 > 15.29, $p < .05$). This primacy effect was not obtained when E's rated others' IQ.

I's, on the other hand, showed the predicted recency effect by rating others higher in the A performance condition than in the D performance condition but only when predicting others' subsequent performance (17.00 > 14.29, $p < .05$).

Furthermore, although I's did not rate others in the A performance condition higher than E's they did rate others in the D performance condition lower than E's on all major criteria: (a) when predicting others' subsequent performance (14.29 < 20.54, $p < .05$); (b) when recalling the performance of others (15.08 < 18.83, $p < .05$); and (c) when evaluating others' IQ (5.88 < 7.04, $p < .05$).

When evaluating the performance of others I's and E's did not make differential attribution of either motivation generally (Mot_{tot}) or of "interest", although I's, more than E's, reported that others had "tried" to perform well on the task, $F(1, 80) = 8.5$, $p < .01$. Furthermore, I's, in comparison to E's, attributed more "lack of effort" to others' failure to answer all problems correctly ($Effort_{13}$) as a function of others' performance patterns, $F(1, 80) = 7.2$, $p < .01$; with I's, in comparison to E's, attributing less "lack of effort" to others' poor performance when in the A performance condition. Also, when asked to make a forced-choice categorical response more I's than E's tended to attribute the overall performance of others to "effort" rather than to "ability" (21 > 9; Chi square 12.19; $n = 48$, $p < .01$).

The Relationship Between Self and Other Perceptions

Assuming the personal knowledge model it was predicted that persons would perceive and interpret the behaviors of others (make causal attributions) as a function of their own experience of personal causation, and thus I's, in comparison to E's, would be more likely to perceive others like they perceived themselves. This general prediction was only partially supported.

I's, in comparison to E's, did not show greater correlations between their self and other ratings (differences between correlations were computed according to McNemar, 1962, p. 140) when compared irrespective of the A or D performance conditions (Table 3).

INSERT TABLE 3 ABOUT HERE

However, in the D performance condition (Table 4) I's, in comparison to E's, did show higher correlations between self and other ratings when predicting performance (PP) and when making attributions of motivation (Mot_{tot}, $Effort_{10}$, $Effort_{13}$). In the A performance condition on the other hand, E's, in comparison to I's, showed a greater correlation in their self and other ratings when recalling performance scores (PR) and when attributing performance on questions answered correctly to effort ($Effort_{10}$).

INSERT TABLES 4 and 5 ABOUT HERE

Discussion

In general, the apparent primacy effect obtained by Jones et al. (1968) was found primarily for E's. I's tended to show an apparent recency effect in which they rated themselves and others higher in the A than in the D performance condition on most criteria. In fact, with the exception of IQ ratings for others, E's always showed the primacy effect for both self and other ratings. E's always showed the primacy effect for both self and other ratings. E's never showed a recency effect. Although I's did not show a recency effect for all criteria on self and other ratings, any recency effect found in the study was obtained for I's. I's did, however, show a recency effect more often on self ratings than on other ratings.

Furthermore, I's, more than E's, tended to attribute their own and others' performance to motivational factors, whereas E's, more than I's, tended to attribute their own and others' performance to ability. Although I's more than E's perceived others like they perceived themselves when in the D performance condition, E's showed higher correlations for self-other perceptions in the A performance condition.

Although I's and E's have been found to differ in the extent to which they seek and acquire information relevant to problem solving (Davis and Phares, 1967) the obtained differences between the perceptions and evaluations of I's and E's in this study can hardly be due simply to a difference in information acquisition inasmuch as both groups of Ss (I's and E's) apparently recognized the different predesigned performance patterns in like manner. The obtained differences between I's and E's in this study tend rather to support the findings of Phares (1968) that I's tend to process and/or utilize information inputs differently than E's.

This interpretation seems especially relevant when one compares mean performance prediction scores (PP) with mean performance recall scores (PR) for both E's and I's. Although E's, in comparison to I's, evidenced higher mean PP and PR scores for themselves and others throughout their predictions were apparently not dependent on the performance pattern conditions. The mean PP socres for E's were higher than their mean PR scores in both the A and the D performance conditions. I's, however, predicted significantly higher than they recalled only in the A performance condition and tended to make predictions that were lower than their recall scores in the D performance condition.

Essentially the results of this study support a personal knowledge model in attribution theory, suggesting that perceivers differ in their perceptions of persons and their behaviors in terms of attributing different causal relations (intentions, motives, etc.).

It is clearly also possible that one would observe interactions between perceiver and stimulus person variables in the sense, for example, that I's would perceive and interpret the behavior of other I's differently than E's. This question remains to be investigated.

Furthermore, while this study represents an investigation of some of the processes and variables operative in person perception generally, and more specifically, with regard to the development of intellectual expectations for one's self or others, it is as a laboratory study only suggestive of similar processes in more natural settings, as for example, a classroom.

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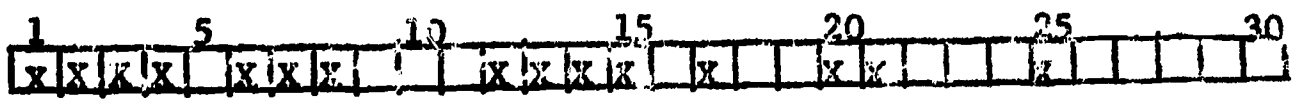

Total (1-30)
15

Descending Performance Pattern (D)

15

Ascending Performance Pattern (A)

Figure 1. Performance feedback patterns used in the experiment.

Each box indicates a trial or problem and each X indicates a correct response.

Table 1

Analysis of Variance Summaries for Self Ratings

Source	df	PP		PR		IQE	
		MS	F	MS	F	MS	F
A-D(s)(1)	1	9.37	<1	294.00	30.1**	5.04	3.4
A-D(o)(2)	1	5.04	<1	9.37	< 1	0.17	<1
SO-OS (3)	1	2.67	<1	2.04	< 1	0.37	< 1
I-E (4)	1	77.04	5.3*	73.50	7.5**	2.04	1.4
12	1	18.37	1.3	1.04	< 1	0.67	<1
13	1	2.67	<1	45.37	4.7*	7.04	4.8*
14	1	315.37	21.8**	104.17	10.7**	35.04	24.1**
23	1	0.17	<1	0.00	< 1	4.17	2.9
24	1	70.04	4.9*	9.37	<1	0.00	<1
34	1	0.00	<1	18.37	1.9	2.04	1.4
123	1	6.00	<1	0.17	<1	0.00	<1
124	1	9.37	<1	26.04	2.7	0.67	<1
134	1	0.67	<1	22.04	2.3	2.04	1.4
234	1	42.67	3.0	10.67	1.1	6.00	4.1*
1234	1	0.17	< 1	8.17	<1	0.00	<1
Residual	80	14.43		9.74		1.45	
Total	95						

*p < .05; **p < .01.

Table 2

Analysis of Variance Summaries for Ratings of Others

Source	df	PP		PR		LQE	
		MS	F	MS	F	MS	F
A-D(o)(1)	1	6.00	<1	123.76	17.6**	0.37	<1
A-D(s)(2)	1	0.17	<1	5.51	<1	0.04	<1
SO-OS (3)	1	2.67	<1	5.51	<1	2.04	1.3
I-E (4)	1	222.04	20.9**	147.51	20.9**	8.17	5.1*
12	1	4.17	<1	2.34	<1	3.37	2.1
13	1	32.67	3.0	1.26	<1	3.37	2.1
14	1	247.04	22.9**	38.76	5.5*	8.17	5.1*
23	1	0.67	<1	17.51	2.5	0.37	<1
24	1	12.04	1.1	10.01	1.4	0.00	<1
34	1	12.04	1.1	0.26	<1	0.00	<1
223	1	2.67	<1	5.51	<1	2.04	1.3
224	1	22.04	2.0	0.51	<1	0.00	<1
134	1	0.37	<1	0.01	<1	0.00	<1
234	1	0.37	<1	1.26	<1	2.67	<1.7
1234	1	35.04	3.2	12.76	1.8	0.67	<1
Residual	80	10.79		7.07		1.60	
Total	95						

*p <.05; **p <.01.

Table 3

Correlations between Self and Other Ratings

for all Performance Conditions Combined

Ratings	$r_{I's}$ (n = 24)	$r_{E's}$ (n = 24)	t_{rI-rE}
PP	.583**	.615**	< 1
PR	.131	.633**	1.94
IQE	.277	.334	< 1
Effort 10	.310	.465*	< 1
Effort 13	.383	.036	1.17
Mot_{tot}	.619**	.723**	< 1

*p < .05; **p < .01.

Table 4

Correlations between Self and Other Ratings

in the D Performance Condition

Ratings	I's (n=12)	E's (n=12)	t_{rI-rE}
PP	.732**	.144	5.25**
PR	.125	.034	<1
IQE	.287	.283	<1
Effort 10	.527**	.154	2.93**
Effort 13	.683**	-.227	7.09**
Mot_{tot}	.645*	.310	2.91**

*p < .05; **p < .01.

Table 5

Correlations between Self and Other Ratings

in the A Performance Condition

Ratings	I's (n = 12)	E's (n = 12)	t_{rI-rE}
PP	.323	.507**	1.54
PR	-.361	.428*	3.40*
IQE	.149	.202	<1
Effort 10	.229	.675**	3.97**
Effort 13	.200	.086	<1
Mot_{tot}	.719**	.848**	<1

*p <.05; **p <.01.